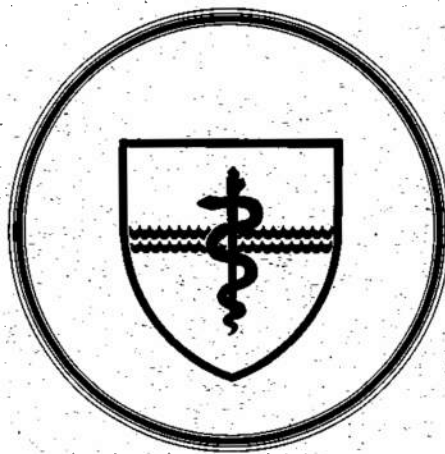


# NAVAL SUBMARINE MEDICAL RESEARCH LABORATORY

## SUBMARINE BASE, GROTON, CONN.



REPORT NUMBER 1083

MEDICAL TICKLER:

A User's Manual

by

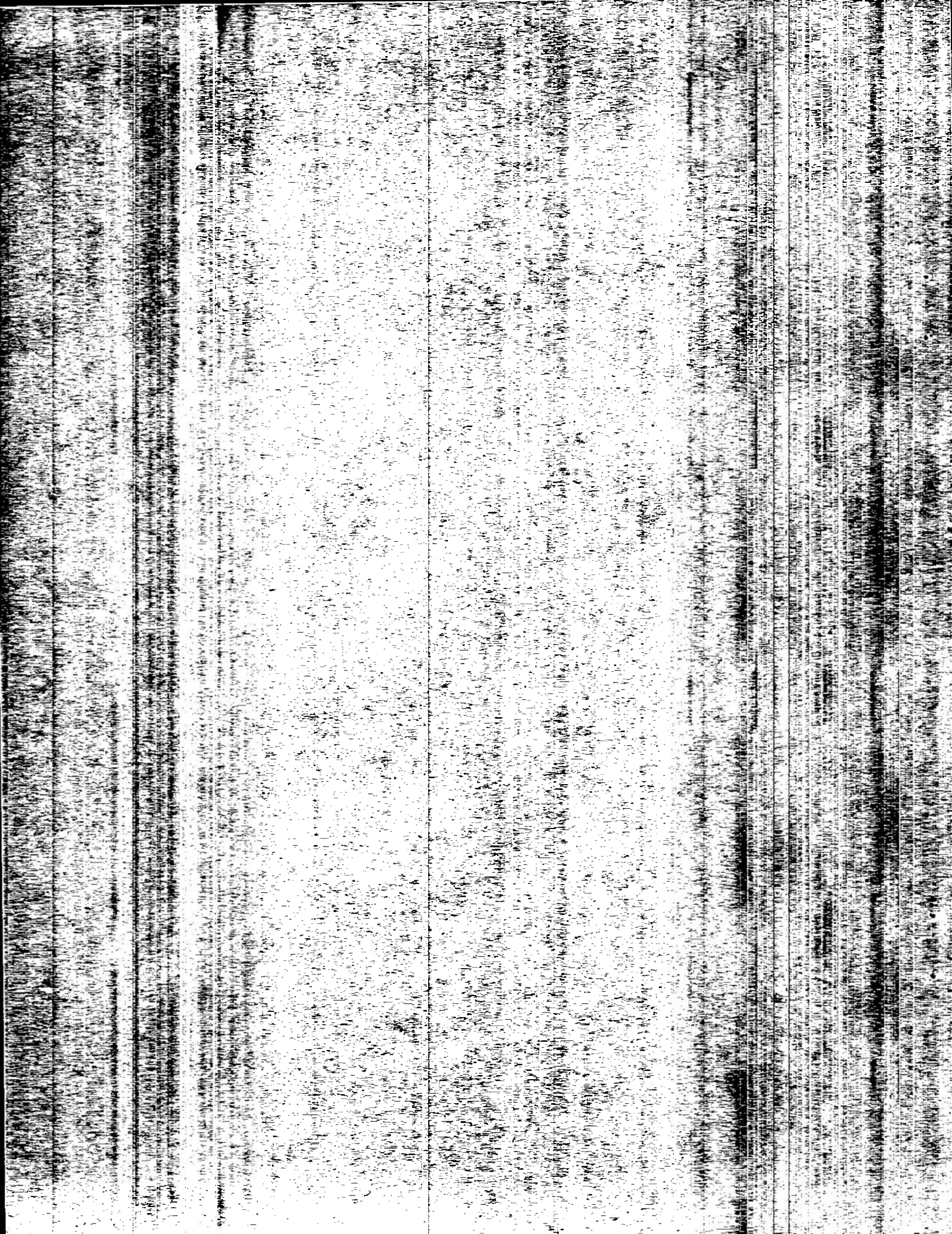
David G. Southerland

Naval Medical Research and Development Command  
Research Work Unit M0095.05-1045

Released by:

C. A. Harvey, CAPT, MC, USN  
Commanding Officer  
Naval Submarine Medical Research Laboratory

20 October 1986



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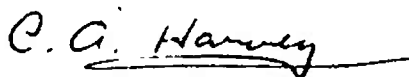
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by

David G. Southerland

Approved and Released by:



C. A. Harvey, CAPT, MC, USN  
Commanding Officer  
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Approved for public release; distribution unlimited

## SUMMARY PAGE

### PROBLEM:

To provide a user's manual for use with TICK, a computerized medical tickler filing system.

### FINDINGS:

Presentation is made of the purpose of the program, the philosophy of the program design, and the equipment necessary to use the program effectively. A tutorial section is included to enable corpsmen who are not computer literate to use the program effectively. A reference section describing all commands at the differing levels of the program is included.

### APPLICATION:

The information presented will enable the Independent Hospital Duty Corpsman aboard submarines to use effectively the computerized medical tickler program.

## ADMINISTRATIVE INFORMATION

This project was conducted under Naval Medical Research and Development Command Research Work Unit M0095.05-1045 "Sea trials for computer based diagnostic/patient management system for use aboard SSN/SSBN submarines. This manuscript was submitted for review on 9 October and approved for publication on 20 October 1986. It has been designated as NSMRL Report No. 1083.

PUBLISHED BY THE NAVAL SUBMARINE MEDICAL RESEARCH LABORATORY

## Abstract

This is a user's manual for a computerized medical tickler system as used by corpsmen aboard US submarines. The manual is designed for use by corpsmen who have had no special computer training. Using the manual, the corpsman will learn how to store crew member information and perform searches on the stored data. The manual includes a description of equipment needed to start the program along with a tutorial to guide the corpsman through the basic steps in operating the program.

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## I. Introduction

A. The Manual - This manual has been written for the corpsman who is a computer novice to enable him to use effectively a computerized medical tickler filing system. An attempt has been made to instruct the corpsman in the operation of the program without requiring him to be even a casual computer user. It is recognized that the computer literate may become bored with some of the material here due to its simplistic nature. If that is the case with you, feel free to skip those sections with which you are already familiar. The manual itself is divided into five sections. The first is the introduction. The second section discusses the equipment needed to run the tickler program and the procedures required to implement it properly. The third section is a tutorial which is best read while using the computer. The fourth section is a general reference manual, and the last section is an index to the manual.

B. Purpose of the Program - This program is a computerized version of a medical tickler filing system for use by corpsmen aboard submarines, and is designed to increase the corpsman's productivity while decreasing his administrative workload. The program will enable him to track the crewmembers' immunization dates, physical exam dates, and other requirements of the general health maintenance programs in effect on the submarine.

While the program was originally designed for use by 8402 corpsmen for use on submarines, it should be of help to any corpsman in an independent duty situation or in a clinic. This would include the surface community, the air community, and branch clinics in general.

The program in general is a specialized database management system for control of medical records in a tickler format.

C. Philosophy of the Program Design - Three goals guided the design of the program. The first and most important was to aid the corpsman without requiring him to become a computer programmer. The program was designed for use by a person who knows how to type (or at least find the keys on a typewriter), but who knows nothing about computers and has no interest in learning about them. The second goal was to design the program to run as quickly as possible. Finally, the cost to the

ship of acquiring and using the program was to be minimized.

A specialized database management system meets these goals better than a commercial data base program for the following reasons. First, there are no medically specialized tickler programs available for use in the submarine environment, so a commercial generalized database program would have to be used. Most general database programs are designed to be flexible in order that they may be used for many different applications. Therefore, they do not necessarily fit any one application really well. When using such a program, the user has to adapt to the program, the program cannot adapt to the user. If one assumes that the "typical" corpsman knows very little about computer programming then a general program with its bizarre (to the corpsman) structure and commands can cause enough anxiety that the corpsman might not use the program. Secondly, most generalized programs, by virtue of their versatility, usually run more slowly than do specialized programs. Finally, if a commercial program were used, then the total cost to put the program on each submarine would be quite high. Placing a two hundred dollar program aboard 200 submarines would cost forty thousand dollars for that one program alone.

The program was designed to run on the readily available "standardized" operating system, MS-DOS®. This allows the program to be used on many different machines. For example, the tickler program was written using an IBM®-PCAT, Zenith®-160, and a Gridcase® III interchangeably. Also, the program can be used on the SNAP-II intelligent terminals to be placed aboard submarines in the near future.

The program was written in a high level language capable of compiling large programs, Microsoft® Pascal. At the time the program was written, Microsoft® Pascal allowed programs to be larger than those compilable under BASIC. Further, Pascal allows a modular design approach that is difficult at best in using a language such as BASIC.

In summary, an attempt was made to develop a medical tickler program which would be easy for the novice to use, relatively fast in execution, and would run on a standardized operating system on a variety of microcomputers.

## II. Getting Started

A. Equipment Needed - To use the medical tickler system as supplied you must have an IBM® PC or IBM® PC - compatible computer with the following characteristics:

1. Computer - The computer should be one which is sold as being "IBM® compatible", and the operating system must be MS-DOS® or PC-DOS® version 2.0 or higher.

The medical tickler program will not run on the Zenith®-100 ( Z-100 and Z-120 ) series microcomputers purchased by the US Navy over the past several years unless a special circuit board has been installed. Note that while the Z-100 series (without a special IBM®-PC compatible adapter board) will not run the program, the Z-100 PC series computers will. As a general guide, Zenith® computers with movable or detachable keyboards are IBM® compatible while those which have the keyboard built as an immovable integral part of the computer chassis are not IBM® compatible, unless they have been modified by the addition of an adapter circuit board. The easiest method of ascertaining IBM® compatibility is to ask someone who uses the computer.

2. Graphics Capability - The computer must have the color graphics adapter (CGA). This does not mean that the computer must have a color monitor. While this sounds contradictory, it is not, for many computers allow color graphics to be displayed on a monochrome monitor by using shades of gray to represent the different colors. Most IBM® compatible computers have the graphics capability as a standard feature even though the computer may come with a monochrome monitor. Again, if you are confused, ask someone who is using the same computer.

3. Memory - No tests have been undertaken to determine the smallest memory needed to run the program. Most IBM® compatible microcomputers come with at least 256 kilobytes of random access memory (RAM). This is more than enough for using the program.

4. Printer - Although the program can be used without a printer, the printer is necessary if you desire a permanent listing of the items for each crew member. The medical tickler program will work with both parallel and serial interfaced printers. The printer output is

initially directed though the parallel port. If you have a serial printer, you will need to use the MS-DOS® command, MODE, to redirect the output through the serial port. Check your computer's user's manual for the specifics, or ask someone knowledgeable about the computer to help you. Be sure you obtain the correct cable to connect the printer to the computer.

B. Disk Contents - The medical tickler system disk will contain the following files:

TICK.EXE	- The main program.
CANMAKE.EXE	- Prog makes canned search (experimental).
CANREAD.EXE	- Prog reads canned search file (also exp).
ADD.HLP	- Help file accessed from the program only.
CHNGALL.HLP	- Help file accessed from the program only.
CHNGITEM.HLP	- Help file accessed from the program only.
INSERT.HLP	- Help file accessed from the program only.
MAIN.HLP	- Help file accessed from the program only.
CATEGORY.DAT	- Data file containing item names, locations.
DEFINIT.DAT	- Data file containing item definitions.
DELFILE.DAT	- Data file keeping track of pt deletions.
DISPLAY.DAT	- Data file containing display page info.
FORMAT.DAT	- Data file containing item format types.
PTDATA.DAT	- Data file containing patient data.
PTSTAT.DAT	- Data file containing database statistics.
SHIP.DAT	- ASCII data file containing boat name and number, and HM name and SSN <sup>1</sup> .
SHOTS.CAN	- Canned search data file.
READ.ME	- TYPE this file for more information.

C. Important keys - To use the program effectively, you need to become familiar with several keys that are not found on a regular typewriter. The following is a short description of the possible locations for the keys. If you do not find the keys, consult your documentation for their location. A sample keyboard is shown in figure 1. Your keyboard may differ slightly.

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<sup>1</sup> You may have a disk containing the Abdominal Pain Diagnosis program developed by NAVSUBMEDRESCH LAB. The SHIP.DAT file on the abdominal pain disk is identical to the SHIP.DAT file on the tickler disk.

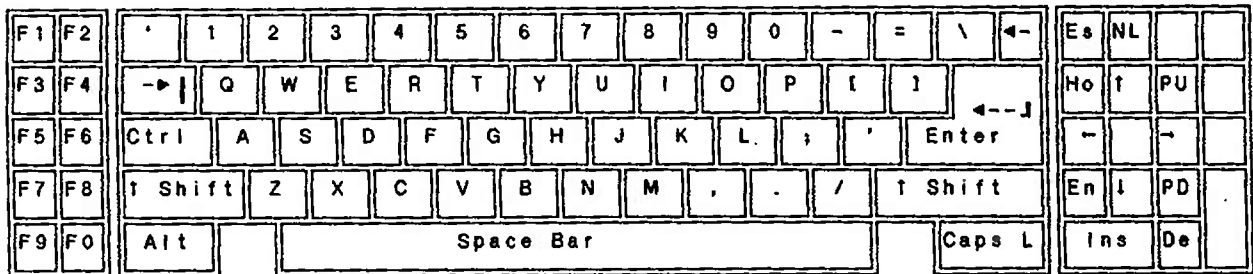


Figure 1 - A typical keyboard.

1. Function Keys - There are ten of these keys. They are usually marked with the letter F followed by a number from one to ten. F1 would be the first key in the group and F10 would be the last key. Usually they are located to the left of the keyboard in two columns. On the lap-sized computers and several others, they may coincide with the normal numeric keys, and you will have to press a special function key along with a numeric key to emulate the ten function keys.

2. Alt Keys - Two keys have to be pressed to enter an Alt key response. As an example, to select Alt-A, press and hold the Alt key then press the letter A key. It does not matter if upper case or lower case is selected for the alphanumeric key. The Alt key is usually found in the lower left hand corner of the main keyboard under the left shift key. Note that the control (Ctrl) key is used in a similar manner, but it is a separate key that produces different results. The control keys are not used in the tickler program.

3. Esc - The escape (Esc) key is used as any other alphanumeric key. It is not used in combination with other keys. Pressing this key will usually return you to a previous section of the program without making any permanent changes. It is similar to an abort key.

4. Cursor Movement Keys - The Home, End, PgUp, PgDn, Ins, Del, and arrow keys are usually found on the numeric keypad at the right of the keyboard. To use these keys, you must first ensure that the numeric keypad lock key (NumLock) is set. The NumLock key toggles from selecting the keypad for the special keys to numerals and back. Normally, the keyboard is set for the special key

use when the computer is turned on, so unless you have used the keypad for numeric entry, the special keys will be selected. Some computers do not have a numeric keypad. If that is the case, then consult your computer's user's manual regarding locations and labels of the cursor movement keys.

5. Enter/Return - This is one key. On some computers it is labeled as "Return" and on others "Enter". It is usually a large key just to the right of the typical typewriter keyboard. This key is used to tell the computer that you are through typing and that the computer is to take the information that was just typed and use it in the program. In this manual this key will be represented by "<Enter>" without the quotes.

D. Backups - A backup is a separately stored copy of all of the files (programs and data) on a disk.

1. Why Make Backups? - Backups ensure that your programs and data are always available to you. If a disk surface is damaged, the information at the damaged portion of the disk may be lost. This damage can occur as a result of poor disk quality, disk age, heavy use, electrical "glitches" in the power supply, or other events that subject a disk to strong physical or electromagnetic forces. Eventually you WILL lose a program or data file in this manner. You may also lose data or programs through operator error. This should not happen if you always follow the procedures exactly as described in the manual. Proper backups maintain a current copy of the programs and data so that if a program or data is lost, you can quickly have the program running again.

2. When to Make Backups - When you first get the program disk (the disk containing all of the programs and data files) you should make several copies of the disk before you ever use it. Then you should place your original disk in a safe place. Always use one of your copies as your working disk. You should make frequent backups of the working disk. Remember that while the original disk contains all of the programs, it has no patient information stored on it. There is no set time interval for making backups of the working disk. As a rule of thumb, backup the disk often enough so that if the working disk is damaged, you will be able to re-enter the lost data onto one of the backups in a timely manner. Also, if there is the chance that you will not be entering more data for some time, then make backups so that if the working disk fails, you will not be forced



into trying to remember what data you entered since the last time a backup was made. The number of backups that should be made will depend on how valuable your data and time are. Generally two backups in addition to the working disk are adequate. Store them in locations separate from the originals and from each other if possible.

If you find that either the working disk or one of the backup disks is damaged, then you should first remove the disk in question and insert an expendable disk which contains no valuable material. Using that disk, test the computer by listing the disk directory and copying unimportant programs from the expendable disk to itself. This is done to ensure that the computer or disk drive is not damaging the disks. If the computer or disk drive is at fault, do not use any programs or data on the computer until the computer is repaired. If the computer and disk drive show no faults, then remove the expendable disk and copy one of the program backup disks to a new disk. You should always have at least your minimum number of good copies of the program before using it. Do not use the old working disk for the backup, discard it. It has proved unreliable and there is a chance that it could fail again.

3. How to Make Backups - There are several ways to accomplish this task. One method involves the Disk Operating System (DOS) command DISKCOPY which makes an exact duplicate of the desired disk onto another disk. Another method uses the COPY command. Copying is the preferred method for backing up the medical tickler program because it forces each file to occupy contiguous areas (all of the file is stored together instead of scattered in parts over the disk). When the computer is looking through a contiguous file, it does not have to jump all over the disk to follow the file. The exact command sequence for making backups will vary depending on what storage devices are connected to the computer. This manual will give backup methods for several differently configured systems. Note that the drive names on your specific computer may differ from those used in the example. If they are different, substitute your drive names for the appropriate drive names in the example. If your computer configuration does not fit one of the following, then consult your computer's user's manual for further direction.

If this is the first time you will have used a particular backup disk, you must format the new disk. This process is necessary to prepare the disk before

information can be copied onto it. The formatting process is necessary only the first time the disk is used. After the disk has been used as a backup disk, the formatting step may be skipped. The command to format a new disk will usually be `FORMAT/S/V A: .` This command executes the program `FORMAT.COM` found in the default directory and formats the disk placed in disk drive A. The `/S` tells the computer to store the operating system on the floppy disk so that the disk can be booted by itself. The `/V` informs the computer that you want to give the disk a name. When prompted, you will enter a name for the disk.

a) Two Floppy Disk Drive System - Most personal computers have two floppy disk drives. They are usually named drive A and drive B. Drive A is almost always the drive on top if the drives are stacked vertically and on the left if they are mounted horizontally. First, as noted in the previous paragraph, your new backup disk must be formatted. Insert the original program disk in drive A and insert the backup disk in drive B. Now type the command `COPY/V A: *.* B: *.*` as written. This will copy all files ( `*.*` ) from disk drive A to disk drive B verifying that the files are correctly copied ( `/V` ). The computer screen should display the list of files on the computer as they are copied. When finished, remove the backup disk and place it in a safe place. If you desire to make another backup then place another backup disk in drive B.

b) One Floppy Disk Drive System - A few computers have only one floppy drive. If you have only one drive, you can still make copies of the original program disk, but it will take more effort on your part. Usually, MS-DOS® will use the single drive as both drives A: and B:. If you are using the drive as drive A: and the computer wants to look at drive B:, it will stop and ask you to insert a disk into drive B:. Here you should remove the disk which is being used on drive A: and insert the disk to be used on drive B: into the disk drive. The computer will now assume that the disk drive is now drive B:. Therefore, to make backups using one drive, place the original disk in the drive when it is selected as drive A: and type the command `COPY/V A: *.* B: *.*`. This is the same command that you would use if you had two drives. Unfortunately, you will be required to swap diskettes after every file is copied.

c) One Floppy Drive and One Hard Disk Drive System - If you have one or more disk drives and one or more hard drives (also called Winchester drives or

fixed drives), then you can easily copy the original program disk to the hard drive by placing the original disk in the floppy drive and typing `COPY/V A:*. * C:*. *`. This assumes that your floppy drive is drive A: and your hard drive is drive C:. All of the original program files will be copied to the hard drive. To make backups of the programs stored on the hard disk, place a formatted backup floppy disk in drive A and type `COPY/V C:*. * A:*. *`. Note - the hard disk should already be formatted. Do not attempt to format the hard drive unless your computer user's manual specifically tells you to do so.

E. Start / Exit the Program - Now that you have made your backups, you can proceed to use the program. Place one of the copies of the program disk into the default drive<sup>2</sup>, type "TICK", and then press the <Enter> key. This will place the tickler program into the computer's memory and then initiate the program. To exit the program press the special function key F10. Always exit the program by pressing F10. If you do not, you could lose patient data. You should make at least one and preferably two backups immediately after exiting the tickler program anytime you make changes to the patient data.

<sup>2</sup> The default drive is the one that will be used if a disk command is used without specifying a particular drive. To determine the default drive, look at the main system prompt at the beginning of the line where you can type MS-DOS® commands. It is usually in the form of an upper case letter followed by the greater than symbol and is found at the beginning of the line. "A>" is an example of the main system prompt and informs you that the default drive is drive A. If the default drive were drive B then the prompt would have the letter "B" in place of the letter "A" in the example above. If you do not desire to use the current drive, you can always change the default drive by typing at the main prompt the desired drive letter followed by a colon and then pressing Enter/Return.

### III. TICK Tutorial

We will "walk through" a sample session for the benefit of those who have not used TICK. Here you will learn to use the basic commands in the TICK program. To get the most from this section, you should take the steps described using your computer. Your computer will have a key at the right of the letter keys labelled either "Enter" or "Return". For this section, that key will be represented by "<Enter>". For example, if you are told to type "TICK" <Enter>, then you will first press the letters "T", "I", "C", "K", and then press the Enter or Return key. Do not type the quotes. If this is your first use of the program, do not jump ahead during this tutorial. To attain maximum benefit, you should follow each step. Completing the tutorial will take some time, so you may want to take several breaks or even divide the lessons over several days. If you spread the lessons over several days, on each new day quickly go over the information covered in the last session and you will go faster and remember it longer. Finally, if you do get into the wrong area by accidentally striking the wrong key, you can usually get back to where you were by pressing either the <Enter> key or the Esc (Escape) key.

A. Starting TICK - Turn on your computer and load the MS-DOS® or PC-DOS® operating system by placing a "bootable" system disk in the disk drive. Check your computer's user's manual for specifics. Enter the correct date and time if necessary. If the date and time are correct when displayed, press <Enter> to leave them unchanged. Place one of your newly made backup disks into disk drive A. (If any other drive is used, substitute that drive letter for "A" in the following.) At the ">" prompt, type "A:" <Enter>. This will ensure that drive A is the default drive. Now you are ready to start TICK. At the prompt "A>", type "TICK" <Enter>. The use of upper case letters is not required. After you type "TICK" <Enter>, the computer will load the program TICK from the floppy disk into the computer's memory and execute it. This process will take several seconds so don't be alarmed if the screen does not immediately change. You should see a small glowing light on the drive while the disk is being read. You may hear the movement in the drive during this time. Shortly, the computer screen should clear and the main display page will show. It should look something like figure 2.

Patient:

NAM

## Tickler statistics

NAME		ALLERGY	
SSN		PRP	
RATE		REF TRA	
DIV		OCC-HAZ	
BLOOD			
DOB			
HEIGHT			
WEIGHT			

Use arrow keys, Home, End, PgUp, PgDn, Ins, F1, F2, F3, F5, F6, F7, F8, F9, F10, alt-A, alt-D, alt-F, alt-H, alt-N, alt-P, alt-R, alt-S.  
Use alt-H for help on the above commands.

Figure 2 - Main Display Page #1.

B. The Main Display Screen - Look at your screen now. At the top of the screen you should see the program title and version number. The version number is incremented as new features are added to the program or "bugs" (mistakes) are found in the program and corrected. The current patient's name will be displayed in inverse or highlighted print on the second line to the far left. If you are using the program for the first time the patient name will be blank since you have not yet added any patients to the database. At the far right of the top of the screen, you will find the current display page. For the main display, there are 3 display pages for each patient. The letters "NAM" can be seen underneath the page number. "NAM" shows that the program is in the NAME mode which means that all patients will be listed or searched alphabetically by last name, first name and middle name. If "SSN" is shown instead of "NAM", then all patients will be listed or searched by Social Security Number in accordance with BUMEDINST 6150.33. You will learn later how to change search modes. Centered on the third line is the page heading

for each page. You can change this heading for each of the three display pages. This will also be discussed later. A large box subdivided into rectangles covers the center of the screen. This area contains the names of the data items you are to store and the data itself. The names will occupy the smaller rectangles immediately to the right of the double vertical lines. There can be a maximum of eighteen items displayed per page. A blank in one of the small rectangles shows that no item is displayed there. You will be told later how to assign new items to the blank item spaces if you need to add items to the tickler. The displayed data will occupy the longer rectangle to the immediate right of each item's name. If this is the first time you have used the program, there will be no data displayed since there are no patients in the database. Note that the data displayed will be that of the current patient only. Instructions for the display page will be listed at the bottom of the screen. Do not press any key just yet. If you cannot remember what each key does, pressing Alt-H will display the instructions for the use of each key. Make it a habit to look over all of the screen for directions and you will rarely have problems. Most screens have a help option for more information if you get stuck.

C. Changing the Display Pages (F1, F2) - Now that you have been introduced to the main display screen it is time to move through the three display screens. To move from one screen to the next, you will use the function keys F1 and F2. Locate these keys on your keyboard. They are usually located in a group of ten function keys to the far left of your keyboard, but on some smaller keyboards you may have to press a special "code" key and then a corresponding number key. If you cannot find F1 and F2, either ask someone or consult your computer's user's manual. To go to page 2 from page 1, you just press the F2 key once. Try it now. Note that the top right screen now says "Page 2 of 3" and that both the page heading and data names are different. The remainder of the screen, including the patient's name should remain the same as on page 1. If you were on page 3 you would see "Page 3 of 3" and a different page heading and item name list. Now return to page 1 from page 2 by pressing the F1 key. To go from page 1 to page 3 you can either press the F2 key twice or you can press the F1 key once. In effect, the F2 key increments the page number until it reaches three and then the program loops back to page 1. The F1 key decrements the page number until it reaches one and then the program loops back to page 3. Since the F1 key is usually to the left of the F2 key, think of F1

as flipping through pages in a book to the left (smaller page number) and F2 as flipping through pages in a book to the right (larger page number) and both cycle from one end to the other as though the cover of the book was glued back to back so that page 1 followed page 3. Try moving from page to page until you are comfortable with doing so. Return to page 1 when you are ready to continue.

D. Moving the Cursor (Arrow Keys) - You have just learned how to move from page to page. This enables you to display up to fifty-four data items for each patient. Now you will learn how to select an individual item as you were able to select an individual page.

Currently, the cursor appears as a long bar across from the item NAME. This means that the item NAME is currently selected. Since you have no patients stored, the bar is blank. Otherwise the patient's name would be listed here in inverse print. To move the cursor from item to item on a page, use the arrow keys. They are usually found to the far right of the keyboard on a number pad. Press the down arrow key. If the cursor does not move then the arrow keys may have been switched to another function. To select the keys so that they function as arrow keys, press the NUMLOCK key. This will toggle the keypad keys into being used as arrow keys. Pressing the NUMLOCK key again will toggle the keys back to being used as a number pad. If the cursor moved when you pressed the down arrow key, it should now be selecting SSN data. Notice that the length of the cursor is now shorter. The cursor will always be the same length as the maximum length of the data to be entered in the space the cursor occupies. Continue pressing the down arrow. Notice that the cursor will move from the bottom of the first column to the first item in the second column. Also, unnamed items are skipped. Continue pressing the down arrow and observe that the cursor will cycle from the bottom of the second column back to the first item in the first column, NAME. The up arrow does just the reverse of the down arrow. Try pressing the up arrow several times. The cursor will move up the first column and then to the bottom of the second column. The right arrow will move the cursor to the right if it is in the left column and cycle the cursor to the left if in the right column. The preceding is true if there is another item in the same row to which the cursor may move. If the cursor rests on the only item in a row, pressing either the right arrow or the left arrow does not affect the cursor position. The left arrow does the opposite of the right arrow. Try all arrow keys several

times so that you can actually see what they do. Try using the arrow keys on pages two and three. When you are through experimenting with the cursor keys, return the display to page 1.

E. Data Item Definitions (F3) - As you have been using the different keys and moving the cursor about the screen, you may have been curious about the definitions of some of the items listed. TICK has a definition function which is always present at the main display screen level. To get help on a particular item, you must first select it with the cursor then press F3.

Let us say that you don't know what SNF2 represents or what format is used for the data. Go to page 2 and move the cursor so that it is in the SNF2 data space. If you were on page 1, you should have pressed F2 once and the down arrow twice. Now that the desired item is selected, press F3. The definition of the item will be displayed on a page by itself. (See figure 3.) Do not worry about having erased the screen of the display page for it has been saved. The item name will be highlighted at the top of the screen. Below that, the length and the format of the item will be listed. The format describes how the data is to be entered and will be discussed later. Finally, the definition will be displayed in the middle of the screen. At the bottom of the screen you are told to press the <Enter> key to return to the previous screen after you have read the definition. Explore the item definitions if you so desire at this time, returning to page 1 when you are ready to proceed. If you want to modify or add definitions, the reference section of this manual shows how to make such changes.

F. Help (Alt-H) - Before we continue, you should know how to use the help command Alt-H. If this command is available for the currently displayed screen, the instructions at the bottom of the screen will so say. The help command is always present for the main display pages and is also available at other critical points in the program. The information supplied at the several points differs depending on the context in which help is requested.



Definition of item SNF2 .

Length = 4  
Format = YYYY

( @ = alphanumerics, \* = numeral )

Stannous Floride - Enter date of last stannous floride treatment in the format YYYY. This will usually be the same date as the Dental exam, but not always.  
example: 8602 (Feb 1986).

To continue, press RETURN or ENTER

Figure 3 - Definition screen for SNF2.

To access the help function, hold the Alt key (usually a separate key in the lower left hand corner of the keyboard) and press the letter "H". If you ask for help while working with the main display pages, you will see a display entitled, "Main Menu Help". Here you will be able to read about your choices for the display screen in question. Notice that of the keys listed on this page, you have already learned about the arrow keys. You will learn about the other keys shortly. For now, there is no need to read all of the page. This part of the tutorial is concerned only with the procedures you must follow to see all parts of a help file. At the bottom right of the screen is the help page number and total length in pages of the help file. Here you see that you are currently on page 1 of a 7 page help file. To examine the next page, the letter "N" (representing "Next") is pressed. Press "N" now to see page 2. To get to each higher numbered page, you press the "N" key. To go backward, the "P" key (representing "Previous") is pressed. Press the "P" key now. Note that you are now back to page 1 of 7. To leave the help function, the

letter "X" (representing "eXit") is pressed. This key can be pressed from any of the help pages. Also, if you are on the first page and you press "P", you will return to the main display page. Similarly, pressing "N" while you are on the last page of the help file returns you to the first page. From page 1 in the help file press the letter "X". Note that the cursor has returned to the item which was selected before you entered the help function. Since you now know how to access the help function, you can do this later after you have learned several other important commands. Remember that the information displayed by the help command may differ depending on the screen displayed at the time help was requested. Press 'X' now to exit the help function and return to the previous display.

G. Adding Patients to the Database (Alt-A) - Next you will learn to add new patients to the database. You should now ensure that you are using a spare copy of the program disk. To add a new patient you must press Alt-A (Add patient) while on one of the main display pages. If you have been following these lessons you should already be on page 1. Press Alt-A (hold down the Alt key and press the letter "A"). Now you should be in the new patient addition mode as shown in figure 4. Notice that on the second line at the top of the screen the phrase "ADDING A NEW PATIENT" can be seen. While in the new patient addition mode, you can only add new patient information. You cannot use the definition or search operations as you can from the main display pages. In the patient addition mode you can enter any information available for the patient. Initially, you should try to enter at least the patient's name and SSN because the program will list the patients in order of name or SSN. Look at the bottom of the screen at the instructions. Note that the instructions are different from those on the main display pages. There is also a different help function here. However, on this page the arrow keys, F1, and F2 work as they did on the main pages. If you came here by mistake, you could press the Esc key to go back to the main pages without storing data for a new patient. For these sessions, we are going to enter information that will be used throughout the remainder of this tutorial.

NAME		ALLERGY	
SSN		PRP	
RATE		REF TRA	
DIV		OCC-HAZ	
BLOOD			
DOB			
HEIGHT			
WEIGHT			

Use arrow keys, alphanumerics, ESC, F1, F2, ENTER/RETURN, alt-A, alt-H.  
 Use alt-H for help on the above commands.

Figure 4 - Patient Addition Screen #1.

Entering data in the new patient addition mode is simple. You move the cursor to the appropriate position where you wish to add the data and then you type in the data followed by <Enter>. Then you move to another item and repeat the process. When finished you type Alt-A again to exit the addition mode and the data for the new patient is saved in the database. If you decide that you do not want to save the new data or you entered the new patient mode by mistake, then type the Esc key. You will return to the main display mode without storing the new patient data.

Let us now add a new patient. You will be told to enter certain data which will be enclosed within quotes. Do not type the quotes. You should already be in the new patient mode on the first page. Immediately after entering this mode, the cursor will be on the first item which in this case will be the NAME. Now look at the cursor. Notice that a bit of it is blinking at the bottom. This shows you where a letter would appear if you were to type one. When entering patient data, you do

not have to type in upper case. If you type in lower case, the letters will be converted to upper case. Type in the following name without the quotes: "DOE, JOHN A". If you make a mistake, use the backspace key to back up and correct the mistake. When you have finished typing the name, press <Enter>. Notice that the cursor will move to the next item which in this case is SSN. Here enter a SSN of "123-45-6789". Do not type the quotes. After typing the <Enter> key, the cursor will be at RATE. Here enter "HML". That is enough information on this page for now. Go to page 2 by pressing F2. The cursor should be at the first item on page 2 which is DENTAL. Enter "8606". This will be the date of Doe's dental exam. Now enter "1" at item CLASS. This is the dental class. Use the arrow keys to move to the item % BF. There enter "18.0". Notice that you can move the cursor around and enter information in the order you wish. That is enough information for this patient. Try to enter at least the patient's name and SSN for a new patient when you make the first entries. Later you can fill in the rest of the information on the main display pages. Press Alt-A again to store the data. This action returns the program to the main display pages. Use F1 or F2 to look at all the pages. Since data is now stored for the patient in the database, that patient's name is listed at the top of the screen next to the the word "Patient:". The patient's name will be displayed in this manner on each page. Remember, Alt-A is used only when you add and later save a new patient. Select Alt-A to add data for the next patient. Move to the appropriate page using F1 or F2. The patient's name is JONES, TOM O and his SSN is 234-56-7890. His rate is QM3. He is a dental class 2 and his dental exam was during 8607. His % BF is 13.5. Press Alt-A to save the data when it has all been entered. We should now have two patients in the database. We will add one more so that we can use these patients later. The patient's name is SMITH, BOB M and his SSN is 345-67-8901. His rate is MTC. He is a dental class 3 and his dental exam was during 8607. His % BF is 21.0. Select Alt-A and enter all this data. Save the data for SMITH and return to page 1 of the main display by pressing Alt-A. We have entered the data for DOE, JONES, and SMITH in alphabetic order, but the program would have placed them in that order, anyway, so long as the system was set for NAM.

H. Displaying Different Patients (PgDn, PgUp, Home, End) - Now that we have some fictitious patients in the tickler, we can explore more of the TICK's functions. Observe the current patient. It should be SMITH. Now press the PgUp key once. JONES should now be

the current patient. Press the PgDn key once. SMITH should be displayed again. The PgUp will "back up" one patient as determined by alphabetical order. The PgDn key goes to the next patient in the alphabetical list. Think of the database as a stack of pages sitting on your desk with each page containing information on a single patient and the stack of pages arranged in alphabetical order based on the patient's name with the "A"'s on the top and "Z"'s on the bottom of the stack. The displayed patient data would correspond to the top page of the stack which you can read. When you press the PgUp key (moving to the previous patient), you pull the bottom page and place it on top of the stack. Pressing the PgDn key (moving to the next patient) takes the top page and places it at the bottom of the stack. The basic alphabetic order of the stack is always maintained. Therefore when the data for the last patient is displayed, pressing PgDn will select the data for the first patient (putting the page at the bottom of the stack). When the first patient is displayed, pressing PgUp will select that for the last patient (pulling the bottom up to the top of the stack). To go to the first patient in the list, press the Home key. To go to the last patient press the End key.

We will now practice. Press the Home key. DOE should be displayed. Press the End key. SMITH should be displayed. Press the PgDn key. Since SMITH is the last patient, DOE will be displayed. Now press the PgUp key. Since DOE is the first patient, SMITH will be displayed. Press the PgUp key twice. DOE will be displayed. Using the PgUp, PgDn, Home, and End keys you can now move at will through the stored patients, examining the data stored for each of them.

I. Locating a Single Patient (Alt-F) - Using these keys is fine if you have only a few names, but what if you have over a hundred and you need to locate the data on a patient who is in the middle. You can go to the first or last patient and push the appropriate PgDn or PgUp key many times. This can be both tiresome and slow. An easier way is to use the Find function. To use this, Alt-F is pressed. Then at the prompt, enter as much of the name as you desire and press <Enter>. The computer will find the name of the first patient that fits alphabetically the letters you entered. Practice now. Press Alt-F. Type the letter "S" followed by an <Enter>. SMITH will be selected. You could have entered

"SM", "SMI", or the full name to select SMITH in this case.

J. Name / SSN Sequencing of Patients (Alt-N, Alt-S) - BUMEDINST 6150.33 deals with the storage of medical records by Social Security Number. If you maintain your medical records in accordance with this instruction, paging through the patients alphabetically is of little use. Therefore TICK has the capability of finding patients based on the storage protocol in BUMEDINST 6150.33. You are able to switch back and forth between the alphabetical and SSN storage format. Look in the right upper corner on one of the main display pages. Below the page number you should see the letters "NAM". This tells you that you are in the alphabetic or name mode for storing patients. Now press Alt-S. You should see "SSN" where "NAM" had been. You are now in the SSN mode for storing patients. The patients are ordered on the basis of the last two digits of the SSN, then the next to the last two digits of the SSN and finally the remainder of the SSN in accordance with BUMEDINST 6150.33. Press Home. SMITH will be displayed for his SSN comes before the others. Press PgDn. DOE will be displayed next for his SSN comes next after SMITH. Press PgDn again. JONES will be displayed now for "90" comes after "89". Press PgUp. DOE is again displayed.

Press Alt-F. Now, instead of typing in part of a patient's name you will enter part of the SSN. Enter "90" and press <Enter>. JONES will be displayed. Now press Alt-N. This will return you to alphabetic ("NAM") mode. Now all page movements will be base upon name.

K. Deleting Patients (Alt-D) - The method used to delete a patient from the database is relatively simple. The patient deleted will always be the patient displayed on one of the main display pages. We will now delete DOE from the database. First locate DOE so that he is displayed on one of the main pages. Now press Alt-D. If the patient displayed is in fact DOE, press "Y" when asked to confirm the deletion. DOE will then be deleted from the database. Any information stored on that patient is now lost. You are required to type a "Y" to actually delete the patient record. This is used in case you accidentally entered the delete routine. Typing "N" will return you to the main display pages without deleting the patient's record. This is the only method available to delete patients' records.

L. Changing an Item for Current Patient (Ins) - Let us say that JONES has recently made second class. We

need to update his rate in the database to reflect this. Select JONES as the current patient. Move the cursor to the item RATE which is the third item down on the first display page. "QM3" is currently stored. Press the Ins key. You should now be in the single item insert mode. Look underneath the "PATIENT:" heading. The word "INSERT" should be seen blinking there. A small portion of the cursor at the RATE data should also be blinking. Any letter typed will appear at the blinking portion. You can either type in "QM2" and press <Enter>, or you could press the right arrow twice to move the blinking portion to the "3" and type "2" followed by <Enter>. Notice that the cursor will then go to the next item and the changes you made will now be displayed. This routine can be used repeatedly to change or add data to an already existing patient record. This would be the method to use to finish inserting data for the patient records we originally created.

M. Changing a Single Item for Every Patient (F9) - Suppose the date is 27 July 1986 and you have just given PPD's this month to everyone on the boat who was not a converter. Now you need to update the date the PPD was given for the crew. You could page through all of the patient records, stopping to use the single item insertion method, but there is a better method for use in situations like this. Press Alt-N to select name mode. SSN mode will also work with this method, but let us use NAM mode in this example. Press F9. You are now shown a list of all the items kept in the database. Select PPD by typing "26" followed by <Enter>. The date the PPD was given is typed in the format "YYMM" which represents the 2 digit year followed by the 2 digit month. For our example, type "8607" followed by <Enter>. A new screen will be displayed as shown in figure 5. The item chosen and the default data will be displayed at the top of the screen. The box will list the patients by either name or SSN depending on which mode was current when F9 was pressed. There are several ways to change the data here. Typing Alt-E will update the item with the default data for every patient in the database. The Alt-E method is fine if the same data will be used for every patient, but suppose in our example, you have ten or twenty people who are converters. You can use the up and down arrows to move the cursor to the desired crew member. Press the down arrow. Notice that the cursor will move to SMITH. Press the down arrow again. The cursor will loop back to the first patient since SMITH is the last patient. Notice that none of the data for the patients was changed. Now press PgDn. The data on the patient at the cursor will be updated and the cursor will move down.

Press PgUp. Again, the data on the currently selected patient will be updated with the default data and the cursor will move up one. Suppose SMITH was a converter; therefore he should be so designated. Move the cursor to SMITH by pressing the down arrow. Press the Ins key. Type in "CONV" and push <Enter>. In this manner you can change the patient data to a value different from the default value. Press <Enter> when you are finished here.

Default data for item PPD is 8607 .

Patient Name	PPD
JONES, TOM O	
SMITH, BOB M	

alt-E. . . . . : updates Every patient with the new data.  
PgUp, PgDn. . . : updates the selected patient only and moves cursor.  
up, down arrow : leaves data unchanged and moves cursor.  
ENTER/RETURN . : exits this part of the program.  
Ins. . . . . : to change current pt's data to something other than default.  
alt-H. . . . . : for more information.

Figure 5 - Multiple Patient Single Item Update Screen.

N. Searches - There are two basic types of searches; custom searches and canned searches. These search routines allow you to select individuals based on certain criteria. Using the results of these searches, you can quickly generate lists, memos, or letters if you also have access to a word processing program.

1. Custom Search (F5) - Custom searches allow you to list patients based on certain criteria which you enter at the time of the search. This area probably will be used more often than will any other part



of the program. We will go through a sample search. Suppose you are tasked with the random urinalysis program and the "magic number for today is 1". You therefore need to make a list of all individuals whose last digit of their SSN is "1". Go to one of the main display pages of TICK if you are not already there. Now press the F5 key. The new display will have "Concoct-A-Search" at the top and 3 choices in the middle of the screen. These choices tell the computer where to send the results of the search it will perform. You can send the output to the screen so that you may quickly review it, you may send the output directly to the printer, or you may send the output to a file stored on disk. Screen output is good for an initial viewing of the search results. Printer output is good if you need a quick hard copy of the results. File output will be most used, for once the data is in a file, you can use your favorite word processor to add the "From:", "To:", and "Subj:" headings to the file and to sign your name at the bottom of the file. Then you have a memo ready for printing for distribution. For this example, we will use screen output so that we may immediately see the results of the search. Press "1" followed by an <Enter> to select screen output. Now the screen will display three choices for the type of search. Selecting single search will allow you to search through all the records for a characteristic of a single item. The second choice allows you to search all records based on characteristics of two items and both characteristics have to be found. An example would be to search for all personnel who are on weight control (Search1) and are not in the PRP (Search2). The third choice allows you to search all records based on the characteristics of two items where either one of the items can be true for the patient to be listed. An example here would be to search for all personnel who are either on weight control (Search1) or are 72 inches tall (Search2). In our example, we want to perform a single search, so type "1" followed by an <Enter>. All items in the database should now be listed. Type "2" followed by an <Enter> to select SSN. SSN will be highlighted to show that it has been selected for the search. At the bottom of the screen the format for the item will displayed as a template. Here the "#" denote single digits and the "-" represents the "dash" in the SSN. Now you will enter on the template the characteristic for which the search will be done. Since we are looking for all personnel whose last digit of their SSN is "1", use the arrow keys to move the blinking cursor over to the last digit position of the SSN and then press "1". This is the manner in which you will always select the characteristic to be searched for any

item. Press <Enter> to continue. Another set of choices is now displayed. This set allows different types of comparisons between the stored data and the search string. For this example press "1" followed by an <Enter>. The computer has all the information it needs to perform the search. However, you now need to tell the computer what you want displayed for each patient found in the search. You may have the computer list up to five items for each person. We will list three. Type "1" followed by an <Enter>. Notice that NAME is highlighted to show that it has been selected. Type "2" followed by <Enter>. Type "3" followed by <Enter>. Finally press <Enter> on a line by itself to tell the computer that you have entered all the items you desire to have listed. The computer will print the name of each item in its appropriate column on the first line. Then the computer will begin its search. It should list SMITH and the appropriate data for him. Since we have only two patients stored, our search will be short. To return to the main display menu, press <Enter>. Custom searches involve four basic steps. First you must state the problem (the object of the search). Second, you must translate the problem into information the computer can understand which consists of the naming the items to be examined, entering the items's values to be searched, and entering the desired relationship of the values to the stored data. Third, you must enter these terms into the computer. Fourth, you collect the results. Let us try one more example. Suppose that today is 5 AUG 1987 and we need a list of all personnel who have not had a dental exam within the past year. To rephrase the example, list all personnel whose date of last dental exam was before AUG 1986. The problem has now been stated. Now we need to put the problem into terms the computer can understand. We will use the date of last dental exam which is item DENTAL<sup>3</sup>. Remember that you entered some information on that particular item when you were adding new patient data to the database. Now the format for item DENTAL can be seen by using the definition key F3 while you are on main display page 2. The format is shown to be "YYMM" where "YY" denotes the two digit year and "MM" denotes the two digit month. Since the year is listed first, a date expressed in this

<sup>3</sup> While the dental class is a given item and a class of 4 signifies that the patient has not had an exam within a year, the class is not updated automatically from day to day. You have to update the class manually. Since we will pretend that we have not made any changes to the dental class in the past several months, we cannot use the dental class as the basis for this search.

manner will be numerically larger than any other date prior to it. We therefore want to locate all personnel whose value for item DENTAL is less than "8608". The problem has been stated and we now have the question phrased so that we can enter it into the computer, let us now enter the data. Press F5 while at one of the main display pages. Enter "1" for screen output. I will not repeat type "<Enter>" any more. You should type that key as appropriate. Enter "1" for a single search. Enter "10" to select item DENTAL. Now enter "8608" to be the search characteristic. Enter "2" since we want all those for whom DENTAL is less than the search characteristic. Now enter "1" to select the crewmembers' names and "10" to select DENTAL. Now press <Enter> on a line by itself to begin the search. Both persons should be listed since their dental exams were in JUL 1986 (8607) which is earlier than AUG 1986 (8608). Using this same method, you can now do searches for any item with a date. This includes birth dates, examinations, and immunizations. Just remember the four steps. Initially, it may help if you write these steps out on a piece of paper to ensure that the search has been thought out before attempting to enter the search into the computer.

2. Canned Search (F6) - The canned search routine which is designed to perform a search based on previously written rules is still under development. Currently there is only one canned search. SHOTS.CAN is a file containing a set of rules which will list all of those individuals requiring certain, but not all immunizations. You will not perform a canned search at this time. This routine is mentioned to make you aware of its existence. For more information on executing canned searches, consult the reference section of this manual. Also, you will have the ability to write your own canned search routines for use in those situations where you are performing complicated or often repeated searches. Building a canned search routine will not be discussed here, but it will be discussed in either the file READ.ME or the program for building canned search routines.

0. Main Display Modifications (F8) - The main display modification section allows you to change the layout of the items on the main display pages. This allows you to group those items in any order you want. Also, you may change the page heading for each page.

1. Changing Item Organization - To make changes to the display pages, select F8. Press F8 now. Now you will enter the number of the display page you

want to change. For example, we will add the SSN to right lower corner of the second page. Press "2". You are now looking at a skeleton display of page 2 as seen in figure 6. The page heading and each item are displayed in their proper locations on the page. The item locations are numbered from 1 to 18 in ascending order starting at the left upper corner and moving down the first column then to the top of the second column and down again. The last item location on the page is #18 and is shown with the appropriate number beside it in the right lower corner. You will enter the number of the item location or a "0" (zero) if you desire to change the page heading. Enter "18" to change the item in this location. A list of items now will be displayed. Also a sentence will remind you which location you are changing and what item was there. If no item presently occupies that location, the word "BLANK" will be displayed. From the list of items displayed choose the item to occupy the selected location. If you wanted to make the location blank, you would enter a "0" (zero) here. Enter "2" to select SSN for the location. You will now be asked to confirm your decision. Type "Y". Once back to the main display pages, move to display page 2. Notice that the SSN will be displayed in the right lower corner. It will be displayed there until you change it again. SSN is now displayed on both page 1 and page 2. You can display each item as many or as few times as you like. It will make no difference to the database.

2. Changing the Page Heading - You can change the page heading in a manner similar to changing the displayed item location. From a main display page, press F8. Press "2" again to make changes to the second page. For this example, the heading will be changed from "Dental/ Physical" to "Dental and Physical". Enter "0" to make changes to the page heading. Now Enter "Dental and Physical". Look up at the heading to see if it is correct. Press "Y" if it is correct. The new heading is now permanently assigned to that page (until you change it again).

P. Item Modification / Creation (F7) - You cannot manipulate the items themselves as easily as you can their locations. You can change the name of an existing item. You cannot change any of the item's other characteristics such as data length or format. You can however delete the data stored in that item for each person or not display the item on one of the three display pages. You can add new category items to the database. In this section, you will learn how to change the name of an existing item and to create a new item.

Patient:

NAM

Dental/ Physical

DENTAL	1	WT_CON	10
CLASS	2	% BF	11
SNF2	3		12
	6		13
VERIFY	5		14
AUDIO	6		15
EYE	7		16
	8		17
	9		18

Choose the number of the location to change.  
 ( '0' to change the page heading. ) >

Figure 6 - Main Display Page #2.

1. Changing an Item Name - For this example we will change the name BLOOD to BT. Press F7. Since we desire to change the name of an already existing item, press "1". Enter "5" to select item BLOOD. In this section, pay attention to upper case and lower case letters, since lower case is not converted to upper case here. This allows you to have lower case item names. Now enter "BT" in upper case as the new item name. Look at page 1 of the main display page to see that BLOOD is now BT.

2. Creating a New Item - Eventually you will want to add new items to the database. We will add a new item now. You will add the item "ASBESTO". "ASBESTO" stands for asbestos physical and it's data will be in the year, month (YMM) format, where the data entered will be the date of the last asbestos physical examination. For those not in the asbestos surveillance program, you could leave their data blank or enter "0000" or "9999" to show that they are not being monitored and therefore do not have to have asbestos physical examinations. You could

also use any other combination you desire as long as you are consistent. To add the new item, first press F7. Now press "2" to add a new item. Enter "ASBESTO". The other items are displayed so that you will not have two items with the same name. Next a list of current formats is shown as in figure 7. You can either pick one of these or add a new format. The "@" represents any character, "#" represents a digit from 0 to 9, "YY" represents the two digit year, "MM" represents the two digit month, and "DD" represents the two digit day. Enter "9" to select "YYMM". Next you will be asked to confirm the new item. If it is incorrect, press "N"; otherwise, press "Y". The new item will be added to the database. However, it will not be displayed until you add it to one of the display screens. If you desire, press F8 and add ASBESTO to the one of the display pages. After placing ASBESTO on one of the display pages, you could add a definition for ASBESTO by placing the cursor in the space next to its name on the main display page, pressing F4, and then following the appropriate directions.

Enter the corresponding number of the desired format of the new item.  
If your desired format is not present, then press ENTER/RETURN by itself.

- 1) eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee
- 2) \*\*\*-\*\*-\*\*\*\*
- 3) eeeee
- 4) ee
- 5) eee
- 6) YYMMDD
- 7) \*\*
- 8) \*\*\*
- 9) YYMM
- 10) \*
- 11) @
- 12) #####
- 13) \*\*.\*

Format number >

Figure 7 - Default Item Formats.

Q. Hardcopy of Patient Data - Although you are maintaining your records in a computerized manner, you still need to have a printed listing of the data stored for each member of the crew. If your computer malfunctions, your data disks are corrupted, or electrical power to the computer is lost due to drills/refit, you still need to maintain your records. If you have a printed list (called hardcopy or printout) of the data for all personnel, then the records can still be maintained. When a hardcopy is printed, each patient's data is printed on a single page, in the format of the main display pages. This enables you to make changes to the printout if necessary and then enter the data back into the computer quickly. Also, the date and time are listed on the printout. This is a reason to enter the correct date and time when you first start the computer. The name of your boat is listed on the printout. This is taken from the file, SHIP.DAT. This file will be created automatically when you first start TICK if SHIP.DAT did not already exist. If you find that the wrong ship name and hull number are printed in the following steps, then exit TICK by pressing F10. Then type DEL SHIP.DAT <Enter>. The file SHIP.DAT should be deleted then. Now restart TICK by typing "TICK <Enter>". You will then be asked if you desire to create SHIP.DAT. Answer appropriately. After building the file, page 1 of the main display pages will then be selected. The following sentences describe the method of obtaining printouts on your personnel. Do not actually carry out these instructions if you do not have a printer connected to the computer. A sample printout is shown in figure 8. To make a hardcopy, you must press Alt-P while on one of the main display pages. You will then have three options: 1) print data for currently displayed patient, 2) print data for several patients beginning with the current patient, or 3) print data for all patients. The first option will give a printout of the displayed patient's data only. This is useful for updating a few scattered personnel records. The second option allows you to print several patient data records starting with the displayed patient record. If you select this option, you will be asked to enter the number of records to print. If you enter "2", then the current patient record and the record immediately following the current record will be printed. The order will be by name if in NAM mode and by SSN if in SSN mode. This option allows you to stagger the printing load so that you only have to print as many records at one sitting as you like. If you are updating a number of the hardcopy records weekly, remember to locate and display the patient immediately after the last patient printed last week. This way you

will not miss any records. The third option allows you to print out all the personnel records at one time. Remember that this may take some time if you have many patients in the database. After typing the number of the option desired, you will be asked to confirm that the printer is on and the paper aligned at the top of the page. Type "Y" if you are ready for the printer to print the hardcopy and "N" if you desire to abort the printout. Once the printer has begun printing, it will take control until it is finished.

This concludes the tutorial section. Not every command was used in this tutorial, but you have used most of the important ones. You should now be able to enter personnel data on all the crew and perform simple searches on the data.



Medical Tickler

Date: 26 JUN 1986  
Time: 17:01

USS MISSISSIPPI SSBN-999 BLUE

SMITH, BOB M

345-67-8901

=====Page 1=====

Tickler statistics

NAME : SMITH, BOB M  
SSN : 345-67-8901  
RATE : MTC  
DIV :  
BLOOD :  
DOB :  
HEIGHT :  
WEIGHT :

ALLERGY:  
EYE :  
REF TRA:  
OCC-HAZ:

=====Page 2=====

Dental/ Physical

DENTAL : 8607  
CLASS : 3  
SNF2 :

WT\_CON :  
% BF : 21.0

VERIFY :  
AUDIO :  
SPARE :

=====Page 3=====

Immunizations and misc.

CHOLERA:  
PLAGUE :  
POLIO :  
SMALPOX:  
TETANUS:  
TYPHOID:  
Y FEVER:

G6PD :  
SSA :  
PPD : 8607  
X-RAY :

=====

Dates are in format YYMMDD or YYMM.  
Dates listed refer to date given, not date due.

Figure 8 - Sample Printed listing of Patient data.

#### IV. Reference - Main Menu

- A. Arrow Keys (up,down,left,and right arrows) - These keys are used to move the cursor (the highlighted bar) from one item selection to another in the appropriate directions within a page of a patient's record.
- B. Home - This key will display the FIRST patient record. Note that the first patient record may vary depending on whether or not the NAM or SSN mode is selected.
- C. End - This key will display the LAST patient record. Again, note that the record may vary depending on NAM or SSN mode.
- D. PgUp - This key will display the PREVIOUS patient record in the current mode. If the first record is already displayed, pressing this key will loop back to the last patient record and display it. Both PgUp and PgDn are useful for scanning through patient records by either SSN or name.
- E. PgDn - This key will display the NEXT patient record in the current mode. If the last record is already displayed, pressing this key will loop to the first patient record and display it.
- F. Ins - This key will enter the insert mode for changes to the item that is highlighted at the time the key is pressed. When you are in the insert mode, you will see a flashing "INS" in the upper left hand corner. Note that this mode allows you to change only one item at a time.
- G. F1 - This is one of the special function keys. Pressing this key will display the PREVIOUS display page (there are 3) of the current record. If page 2 is currently displayed then pressing this key will change the display page to page 1. If page 1 is currently displayed and the key is pressed, page 3 will be selected. Remember that F1 and F2 change the display pages for the same patient record while PgUp and PgDn change

patient records while remaining on the same display page.

- H. F2 - This key will display the NEXT display page. If page 1 is currently displayed then pressing this key will change the display page to page 2. If page 3 is displayed then the display will loop back to page 1.
- I. F3 - This key, when pressed, will display the definition of the category item corresponding to the highlighted data. The name of the item, length and format of the data to be entered for that item, and a definition of the item will be shown.
- J. F4 - This key allows you to add or erase a definition for any item in the database. Use of the key is especially helpful if you are adding your own items. Also, if immunization requirements change you can update the change in the definition section. If you accidentally pressed this key, do not press any key except <Enter> and you will exit this section without making any changes to the definitions.
  - 1. Add a Definition - To add a definition to the selected item, press "1" when requested. You will then be asked to enter up to five lines for a definition. Each line should be under 75 characters. Terminate each line with an <Enter>. If you do not want to type a full 5 lines, then press the <Enter> key on a line by itself. After all data has been entered, you will be asked to confirm the new definition. If the new definition is correct, type 'Y' and the item definition will be updated with the new definition. If the new definition is incorrect, or if you entered the section by mistake, type 'N' to exit this section without making any changes to the definition. When the definition is displayed by pressing F3, the name, format, and length will automatically be listed above the definition. The five line definition is optional and should be used for the addition of information you think is important.

2. Delete a Definition - To delete the definition of the selected item, press "2" when requested. You will then be asked to confirm the deletion. Type 'Y' and the definition will be deleted automatically. Type 'N' and you will exit this section without deleting the definition.

K. F5 - This key enters the customized search routine (Concoct - A - Search) where you can perform searches on the patient records. While there, you can search for a single item, search for the simultaneous presence of two different item characteristics (this AND that), or search for records containing either of two different characteristics (this OR that). You can search for whole items matching the search term or for items that contain the search term (eg: perform a search on the next to the last digit of the SSN). For each search you have the further options to locate all patients whose stored data are equal ( = ), less than ( < ), greater than ( > ), less than or equal ( <= ), greater than or equal ( >= ), or not equal ( <> ) to the particular search item. Finally you may display, or record, up to 5 different items listed for the patients who were found in the search.

1. Choose Desired Output - On the first screen of this section, you will select the type of output for the results of the search. Your options are to send the output to: 1 - the display screen, 2 - a printer, or 3 - a file. Enter the appropriate number of the desired output. Press <Enter> by itself to return to the main display pages.

Display screen output is commonly used for a quick check on the results of the search. The printer output is useful when a check-off list is desired. File output is used in conjunction with your word processing program to generate memos or letters. For example you could search for all personnel who were in the dental class 3, and then, direct the result to the file DENTAL.DOP. After the search was performed, you could use your word processing program to take the DENTAL.DOP

- file and tack the "From:", "To:", "Subj:" headings at the top of the list and your name at the bottom. After you printed the new file and signed it, you would have a memo that could be sent to all department heads, the XO, etc.
2. Type of Search - On the second screen of the search section, you will select the type of search to be performed. Your options are: 1 - single search, 2 - double search; both searches have to be true (AND), or 3 - double search; only one of the searches has to be true (OR). Enter the number of the corresponding search type desired. Neither double search routines require that the search items be different. You could perform a double search on two different characteristics of the same item.
  3. Choose Item to be Searched - On the third screen, a list of all items in the database will be shown and you will select the item for the search by entering the number corresponding to the item in the list. If in the previous step you chose a double search, You will enter now data for the first search item in this step and the next two steps, and then you will return to this step to enter data for the second search and then continue through the remainder of this section.
  4. Enter Search String - After entering the number of the desired item, you will be shown the format of the item at the bottom of the screen. Below the format will be a string of graphics characters representing each letter or digit of the item data. You will type the desired search string here in the exact location within the string of characters. You can use the arrow keys to move the cursor to the desired location. You can use the backspace to delete errors you may have typed. When you have typed in the search string, press <Enter> to continue. For example, to find those individuals whose SSN's third digit is "9", you would press the right arrow key twice to move the blinking cursor to the third digit position, type "9", and then press

<Enter>. Note that the computer uses the dummy characters only to locate the beginning of the search string. Further, the characters guiding the search must be contiguous. For example, if you typed in "1" as the second digit, "2" as the third digit, and "5" as the last digit of the SSN, then the computer would only compare the second and third digits of the SSN's with "12". However, you could perform a double search using the AND option to find SSN's matching #12-##-###5.

5. Choose Search Operation - Next you will choose the search option. The six options are: 1 - stored patient = search item (equal), 2 - stored patient < search item (less than), 3 - stored patient > search item (greater than), 4 - stored patient <= search item (less than or equal), 5 - stored patient >= search item (greater than or equal), and 6 - stored patient <> search item (not equal). You will enter the appropriate number of the desired option. The search item is the string described in the previous preceding paragraph.

If you selected a double search, you would go back and make your selections for the second search item after completing this step.

6. Choose Items for Print Out - After entering all necessary information for the search item(s), you will need to select the items to be listed in the output. A list of all items in the database will be displayed. You will enter the number of the appropriate item to be displayed. There may be a total of five items printed in the output. The maximum limit of five has been set because there is a good chance of the output running off the screen or the paper if more than five items are listed. The items will be listed horizontally in the order in which you enter them. If you do not desire to have five listed, then when you have selected your items, just press <Enter> on a line by itself.

7. Print Out - If you selected your output to go to a printer or a file, you will now be asked to enter a heading. The heading will be centered on the page and can be more than one line. This can be used to add a description to the list so that later you will remember what the list comprises. Press <Enter> on a line by itself when you have entered all heading lines. After the search results have been printed, you will be asked to press <Enter>. This will return you to the main display pages.
- L. F6 - This key enters the "canned" search mode. Here you enter the name of a file which has a .CAN extension in its name. A search will then be done based on what is in the file. This is still in the developmental stage. As an example, SHOTS.CAN will give you a list of all people who need any immunizations (as of JUL 1986).
1. Choose Desired Output - On the first screen of this section, you will select the type of output for the results of the search. Your options are to send the output to: 1 - the display screen, 2 - a printer, or 3 - a file. Enter the appropriate number of the desired output. This screen is similar to the first screen under F5.
  2. Enter Canned File Name - Enter the name of the desired canned search file. The names should have the extension ".CAN". If the file is not found, the program will so state. To exit this section without continuing through the search, press only <Enter> when asked to enter the canned file name.
  3. Print Out - The format for the output is determined automatically by the canned program.
- M. F7 - This key allows you to change the name of an existing item or to add new items to the database. The item will not appear on the display pages until you have fixed its location using F8 . On the first screen of this section your choices are: 1 - change the name of an existing item, and 2 - add a

new item to the database. Press the number of the desired choice.

1. Change Name of Existing Item - In this section, you may change the name of an existing item. No other attribute of the existing item may be changed.

Be aware that you can even give the item the name of another existing item and although this would be confusing, the computer would be able to tell them apart even if you could not.

- a) Choose Item to be Renamed - A list of all items in the database will be displayed as the second screen. Enter the number of the item to be renamed.
- b) Enter New Name - Next you will enter the new name for the item chosen. Here you may use lower or upper case letters or numbers.

2. Add a New Item - In this section you may add a new item category to the database. You will create a unique item name and select a format for the item data.

- a) Enter New Name - A list of all items in the database will be displayed as the second screen. Enter the name of the new item. The computer will check to ensure that you do not use a name that already exists.
- b) Enter New Item Format - After entering the new item name, a list of formats will be shown on the third display. You should enter the number of the desired format for the new item. If the format desired is not listed then press <Enter> by itself and you can make a new format. The next time this routine is used, your new format will be displayed with the others. The format acts as a template for the item. By convention, "@" represents a single letter or number. "#" represents a single digit, YYYYMMDD represents a 6 digit number corresponding to the two digit year followed by the two digit month followed by the two digit day.
- c) Check for Correctness - Once you have selected the item format, a summary of the item including its



name, format, and length will be displayed and you will be asked if the information is correct. If the information is correct, press "Y" and the new item will be added to the database. If the new item is incorrect, press "N" and you will return to the second screen to reselect the new item name. Press <Enter> here to exit this section and return to the main display pages.

- N. F8 - This key allows you to change the format of the display pages. Here you may change the heading on each page or rearrange the way the category items are listed. You may have blank item areas if you so desire. If you like, you could place all immunizations on one page, etc.
1. Choose Display Page - On the first screen of this section you will select the number of the main display page (1, 2, or 3) on which the item to be changed is found. You can press <Enter> by itself to exit this section without making any changes.
  2. Choose Location to Change - If you chose one of the three pages, a skeleton screen of that main display page will be shown. Each possible item location is numbered beginning with item # 1 in the top left hand corner, incrementally down the first column, then down the second column, ending with item # 18 in the lower right hand corner. The number of each item location will be listed in the corresponding data location. Enter the number of the location to be changed or "0" to change the page heading.
  3. Choose Item for Location - On the third screen, a list of all items in the database is shown. If you are changing the page heading, this screen will not be shown. Near the bottom of the screen the chosen location and the item in that location are listed. If there is no item in that location, the item name will be listed as "BLANK". Below this enter the number of the item to be displayed in the chosen location or enter "0" if the location should be blank. This screen

will not be displayed if the page heading is being changed.

4. Check for Correctness - After your selection, the skeleton page will be displayed with the changes just made. If the change is satisfactory, type "Y" and you will return to the main display pages. If the change is unsatisfactory, type "N" and the change will not be saved. You will then be asked to re-enter the number of the page to be modified (1, 2, or 3), or to press <Enter> to exit this section without making any changes.
- O. F9 - This key is used to change the value of a single item for all patients in the database. This would be useful for updating PPD's if they were given on one day.
  1. Choose Item - On the first screen, a list of all items in the database is displayed. Enter the number of the item to be changed for all personnel. If you entered this section by mistake, you can press <Enter> by itself to exit this section and return to the main display pages.
  2. Enter Default Value - On the second screen of this section you will be asked to enter the default value for the item previously selected. This is the value which will replace the data of the selected item for each patient in the database. If you press <Enter> only, you will exit the routine and return to the main display pages.
  3. Window Screen - The third screen consists of a heading, a window containing information about the item to be changed, and instructions below the window.

The heading contains the name of the selected item and the default value for the item.

The window appears as a box containing data for the selected item for each patient. The patients' names are listed in the left column if NAM mode is selected and their SSN's are listed if SSN mode is selected. The right column

contains the data of the chosen item for the personnel.

The instructions are listed below the window. When used on this screen the keys have the following effects:

- a) Arrow Keys - The up and down arrow keys move the cursor in the respective directions. Attempting to move the cursor out of the window with these keys results in scrolling of the patients in the appropriate direction. The data for each patient remains unchanged.
- b) PgDn - This key updates the record for the highlighted patient with the default data and moves the cursor down to the next patient in the database.
- c) PgUp - This key updates the record for the highlighted patient with the default data and moves the cursor up to the previous patient in the database.
- d) Alt-E - This key updates every patient in the database with the default data, beginning with the first patient. After the patient data has begun to scroll within the window, the update process may be stopped by pressing any key. The data already altered will remain changed.
- e) Ins - This key allows the insertion of a value different from the default value. This key will only alter the current patient item data. When this key is pressed, you are shown a bit of a blinking cursor which marks your location in the data to be changed and another set of directions is listed below the screen. The keys for use with this screen are described below:
  - (1) Arrow Keys - Use the right and left arrow keys to move the cursor bit to the left or right, respectively. The data will remain unchanged.
  - (2) Alphanumerics - Type the letter, digit, etc. as necessary to enter the data.

- (3) Esc - The use of this key exits this section without making any changes to the data and returns to the previous screen.
  - (4) ENTER/RETURN - Press this key after the data has been entered to update the database with the new data value.
  - (5) Alt-H - Press this key for a description of the keys available for use in the insertion mode. After reading the help file, follow the directions at the bottom of the help screen to return to the insertion mode screen.
  - f) ENTER/RETURN - Press <Enter> to return to the main display pages. Esc has the same effect. The database is updated with the new changes before exiting.
  - g) Esc - This key has the same function as the <Enter> key above.
  - h) Alt-H - Press this key to obtain help when you are trying to change the value of a single item for all patients. After reading the help file, follow the directions at the bottom of the help screen to return to the F9 window screen.
- P. F10 - This key exits the program in an orderly fashion. You should always use this key to exit the program, otherwise you may lose a part of a patient record that you modified just before exiting.
- Q. Alt-A - Add a new patient. This routine adds a new patient to the database. After this key is pressed, "ADDING A NEW PATIENT" will be displayed in the area of the screen normally reserved for the patient's name. All item spaces will be blank. Add the data available for the patient at this time using the keys below. Do not add a record unless you include, as a minimum, the patient's name or SSN.
- 1. Arrow Keys - (up, down, left, and right arrows) - These keys are used to move the cursor (the highlighted bar) from one

- item selection to another in the appropriate directions.
2. Alphanumerics - The letters, numerals, and punctuation comprise the actual data to be entered.
  3. F1 - This is one of the special function keys. Pressing this key will display the PREVIOUS display page (there are 3). If page 2 is currently displayed then pressing this key will change the display to page 1. If page 1 is currently displayed and the key is pressed, page 3 will be selected.
  4. F2 - This key will display the NEXT display page. If page 1 is currently displayed then pressing this key will display page 2. When page 3 is displayed, pressing F2 will loop the program back to page 1.
  5. ENTER/RETURN - Pressing the <Enter> key after entering data on an item will move the cursor to the next item. While you are adding patients, the down arrow key has the same function as the <Enter> key.
  6. Esc - Aborts this section. If you do not wish to add a new patient, press this key and the new patient data will be deleted. You will then return to the main display pages.
  7. Alt-A - After entering new patient data, you must press this combination to save the new data. Note that this is the same combination that was used to enter this section. Exiting without pressing Alt-A will ensure the loss of the new patient.
  8. Alt-H - Press this to get help on the use of the keys while adding patients. Follow the directions at the bottom of the help screen to return.
- R. Alt-D - Delete the currently shown patient record. You will be asked to confirm the deletion. Type "Y" if the whole patient record is to be deleted or type "N" to retain the record and return to the main display pages.
- S. Alt-F - Find a patient. Locates and displays the first patient record to match the entered search string. Entry format is dependent upon the current mode.

1. NAM Mode - In NAM mode you may type any number of consecutive letters in the name beginning with the first letter of the last name.
  2. SSN Mode - In SSN mode you must type either the last 2 or last 4 digits of the SSN.
- T. Alt-H - Help. At the main display level, this key displays the help text on the display screen. The help text describes the keys used at the main display level.
- U. Alt-N - NAM mode. Selects the name (NAM) mode if not already selected. You can tell which mode is in effect by looking at the upper right hand corner. In this mode paging through the patients, finding a patient, or searching patients will proceed in alphabetical order based on name. The alternative is SSN mode.
- V. Alt-P - Prints patient data in the format in which it is displayed on the screen. This enables you to maintain a "hardcopy" listing of all patients in the database. You may print out either the current patient's data, data for several patients beginning with that of the displayed patient, or all of the patients' data. The name of the boat, date, and time will all be listed on the printout. The boat name comes from the file SHIP.DAT which if not present will be constructed when you run TICK. The date and time are entered when you start the computer.
1. Print Current Patient - This option prints only the currently displayed patient record. It will be printed on a page by itself if the printer paper is aligned at the top of the page. You must confirm that the printer is on and the printer paper is properly aligned before you type "Y" at the appropriate prompt. Typing "N" will abort this section and return you to the main display pages.
  2. Print Several Patients - This option allows you to print a number of patient records (one patient per page) beginning with the currently displayed patient. After this option is selected you will enter the number of records including the

current record to print. The sequence prints down toward the end of the database. The exact sequence will depend on the current mode, NAM or SSN.

Using this option you can print out 10 - 20 records every week or so, staggering your printer workload. To do this, page through the patients until the displayed patient record is the first record in the batch to be printed and at the prompt, enter the number of records to print. You must then confirm that the printer is ready before typing "Y" at the appropriate prompt.

3. Print All Patients - This option prints all patient records (one per page) in the database. The printing begins with the first record in the current mode and proceeds through file in the order appropriate to the current mode, NAM or SSN. Note that if there are many records in the database, this option may take considerable time. You must confirm that the printer is on and the printer paper is properly aligned before you type "Y" at the appropriate prompt. Typing "N" will abort this section and return you to the main display pages.

W. Alt-R - Redraw all three display pages. This key can be used if "noise" in the computer system has affected the display. "Noise" may cause undesired characters to be written to the display screen or the screen to scroll up, thereby causing the data to be displayed in the wrong position.

X. Alt-S - SSN mode. Selects the Social Security (SSN) mode if the program is not already there. All searching and paging by patients follow SSN order as defined in BUMEDINST 6150.33 . The alternative mode is NAM mode.

#### ACKNOWLEDGEMENTS

I wish to thank the following people for their advice and constructive criticism: Dr. George Moeller, Dr. Bernard Ryack, Dr. Kendall Bryant, Dr. Morton Solomon, Mr. Ernest Noddin, Ms. Ellen Perkins, HMC(SS) Daniel Johansen, HM2 Jean F. C. Korach, and HM3 Barbara Hill.



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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NSMRL Rpt. 1083	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) MEDICAL TICKLER: A User's Manual		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER NSMRL Rpt. 1083
7. AUTHOR(s) David G. SOUTHERLAND		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Submarine Medical Research Laboratory Naval Submarine Base New London Groton, CT 06349-5900		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 63706N M0095.05-1045
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Medical Research & Development Command Naval Medical Command, National Capital Region Bethesda, MD 20814-5044		12. REPORT DATE 20 Oct 80
14. MONITORING AGENCY NAME & ADDRESS (If different from Controlling Office)		13. NUMBER OF PAGES 46 pp + Index
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Computer program documentation; Computers; Data bases; Medical computer applications; Medicine; Records		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <p>This is a user's manual for a computerized medical tickler system as used by corpsmen aboard U.S. submarines. The manual is designed for use by corpsmen who have had no special computer training. Using the manual, the corpsman will learn how to store crew member information and perform searches on the stored data. The manual includes a description of equipment needed to start the program along with a tutorial to guide the corpsman through the basic steps in operating the program.</p>		

DD FORM 1 JAN 73 1473

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S/N 0102-014-6601

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